## SERIES 56

**0.5" Diameter, 200mA,**
**.355" Behind Panel**

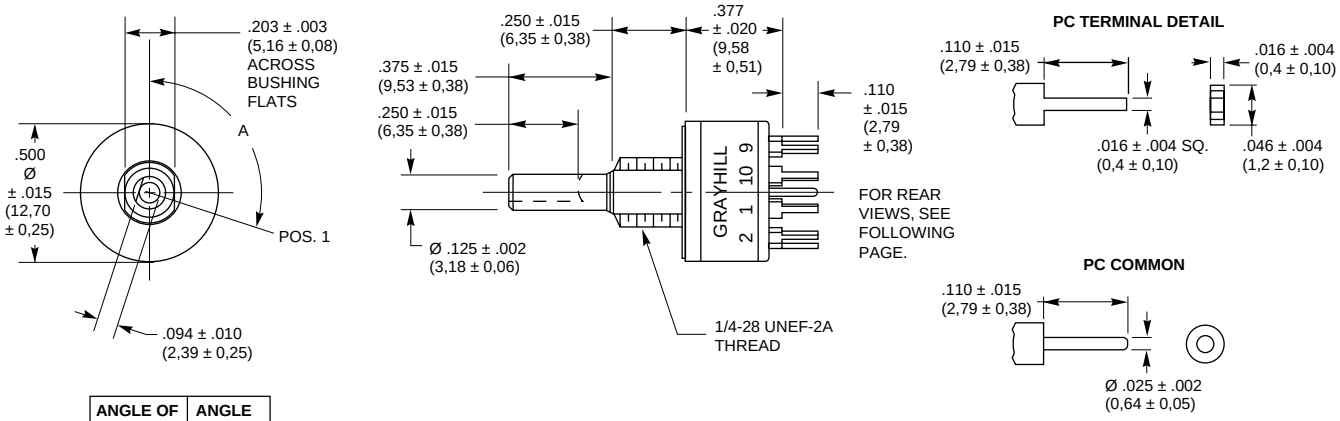



### FEATURES

- Requires Minimum Distance Behind the Panel
- Adjustable Stop Types Provide Prototypes Immediately
- Industrial Quality, Economically Priced

## DIMENSIONS In inches (and millimeters)

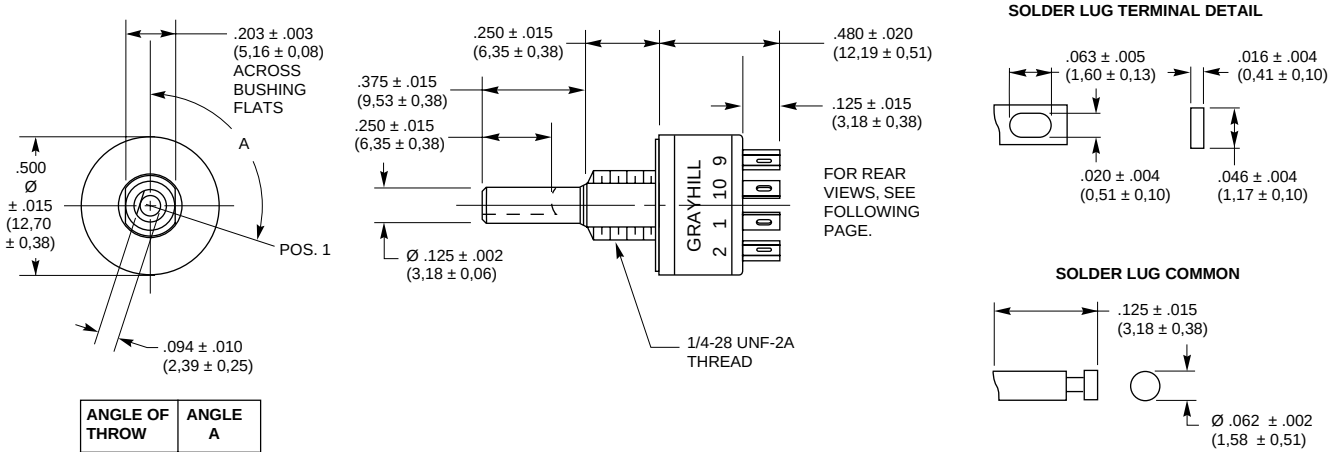
### PC Mount Style




| ANGLE OF THROW | ANGLE A |
|---|---|
| **30°** | 105° |
| **36°** | 108° |

Grayhill part number and date code marked on label.
Customer part number marked on request.

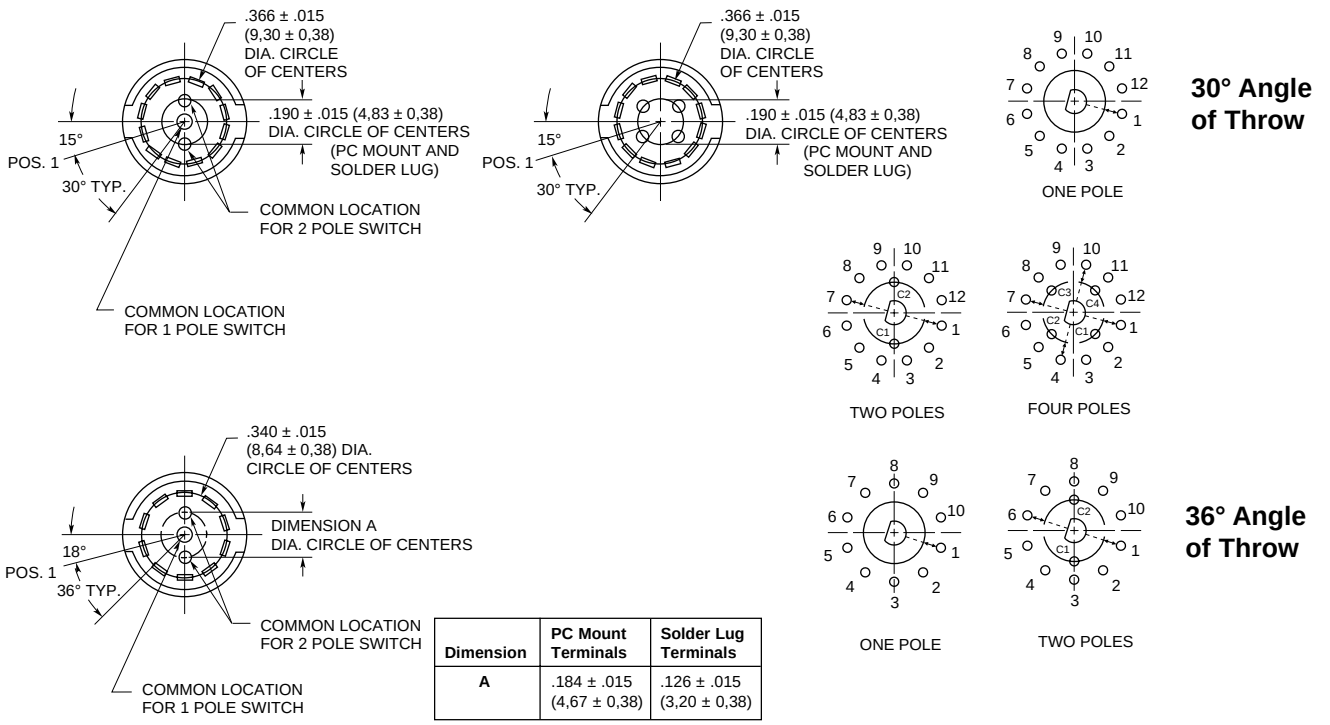
### Solder Lug Style




| ANGLE OF THROW | ANGLE A |
|---|---|
| **30°** | 105° |
| **36°** | 108° |

Grayhill part number and date code marked on label.
Customer part number marked on request.

## CIRCUIT DIAGRAMS AND REAR VIEWS: PC Mountable AND Solder Lug Terminals

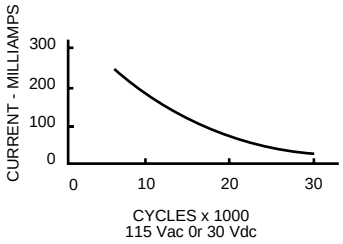



| Dimension | PC Mount Terminals | Solder Lug Terminals |
|---|---|---|
| A | .184 ± .015 (4,67 ± 0,38) | .126 ± .015 (3,20 ± 0,38) |

## SPECIFICATIONS

### Electrical Ratings

Chart shown for non-shorting (break before make) contacts, resistive load.




One cycle is 360° rotation clockwise and 360° return. The data for the curve was measured at sea level, 25°C and 68% relative humidity with the life limiting criteria which follows.

**Contact Resistance:** 100 milliohms maximum, (15 milliohms initially).

**Insulation Resistance:** 10,000 Mohms minimum between mutually insulated parts (50,000 Mohms initially).

**Voltage Breakdown:** 600 Vac minimum between mutually insulated parts at standard atmospheric pressure.

**Life Expectancy:** As determined from the load-life curve for the current to be switched. Contact GRAYHILL for more information if any of the following is true: the life limiting criteria are more critical than those listed; longer operation is required; a larger make and break current is required; the operating environment includes elevated temperatures or reduced pressures.

**Contact Carry Rating:** Switch will carry 6 amperes continuously with a maximum contact temperature rise of 20°C.

### Additional Characteristics

**Contact Type and Forces:** Shorting or non-shorting wiping contacts with over 25 grams of contact force.

**Shaft Flat Orientation:** Flat opposite contacting position of pole number one (see circuit diagrams).

**Terminals:** Switches have the full circle of terminals, regardless of number of active positions.

**Stop Strength:** 7.5 lb-in. minimum

**Rotational Torque:** 3.5 to 9 oz-in. (21-53 mN-m), depending on the number of poles.

**Bushing Mounting:** Required for switches with stops, and recommended for switches without stops.

**Meets MIL-S-3786 for:**

High and medium shock; Vibration (10 to 2,000 Hz); Thermal shock (-65° to 85 ° C); Salt spray; Explosion; Stop strength (7.5 in-lbs. minimum (.85 N-m); Terminal strength; Sealed styles withstand water pressure of 15 PSI minimum (103 KPa) without leakage.

### Materials and Finishes

**Housing:** Zinc die cast, zinc-plated with chromate treatment.

**Mounting Nut:** Brass, zinc-plated with chromate treatment.

**Lockwasher:** Spring steel, zinc-plated with chromate treatment.

**Panel Seal:** Silicone rubber

**Shaft and Stop Arm:** Zinc die cast, zinc-plated with chromate treatment.

**Retaining Ring:** 302 Stainless steel, passivated

**Shaft Seal:** Silicone rubber

**Stop Pins:** 303 Stainless steel, passivated

**Detent Rotor:** Molded thermoplastic

**Detent Spring:** Tinned music wire

**Detent Balls:** Steel, nickel-plated

**Contact Spring:** Stainless steel, passivated

**Rotor Contact:** Brass, silver over nickel plate

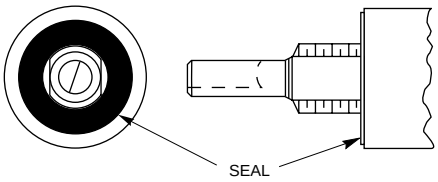
**Common Ring:** Brass, gold over silver over nickel plate

**Terminals:** Brass, gold over silver over nickel plate

**Switch Base:** Molded thermoset plastic

**Mounting Hardware:** One mounting nut .089" thick by .375" across flats and one internal tooth lockwasher are supplied with the switch.

## SHAFT AND PANEL SEAL: Style S

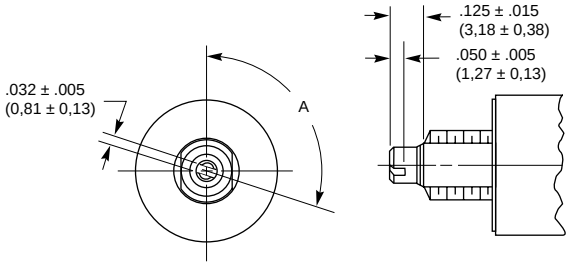



Panel is sealed by an O-ring at the base of bushing. Shaft is sealed by an O-ring inside the bushing. After the switch is mounted, seals do not alter the dimensions of the unsealed style.




**Shaft and Panel Seal**

## SCREWDRIVER SLOTTED SHAFT: Option



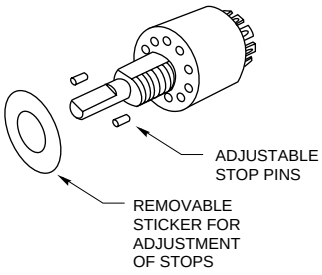

Series 56 rotary switches are available with a screwdriver slotted shaft with dimensions as shown. Available in the styles, angles of throw and pole/positions combinations shown in the choice and limitations chart.

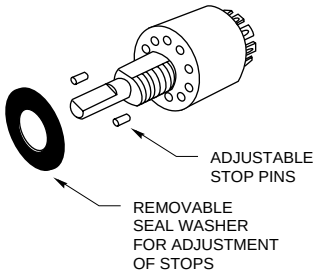



**Screwdriver Slotted Shaft**

## ADJUSTABLE STOP SWITCHES

Two stop pins and an adhesive backed sticker or seal washer are provided. Sticker is temporarily removed to locate stop pins as desired to limit the shaft rotation. All dimensions are identical to the fixed stop switch counterpart.

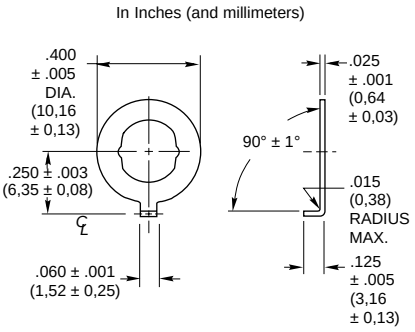





**Adjustable Stop**

## ACCESSORY: Non-Turn Washer




**Part No. 50J1066**

Cut round hole for the bushing and for the non-turn tab. Washer fits the double D bushing flats. Washer is sold only when accompanied by an order for a like number of switches. Washer is 302 stainless steel.

## SUGGESTED ADJUSTABLE STOP SUBSTITUTION GUIDE

| Fixed Stop Style | Adjustable Stop Style Equivalent | Fixed Stop Style | Adjustable Stop Style Equivalent |
|---|---|---|---|
| 56A | 56D | 56B | 56BD |
| 56S | 56SD | 56BS | 56BSD |
| 56P | 56DP | 56BP | 56BDP |
| 56SP | 56SDP | 56BSP | 56BSDP |

## CHOICES AND LIMITATIONS: Series 56

A = Standard, 1/8" Shaft
B = Screwdriver Slot Shaft
D = Adjustable Stop (Adj. Stop)
P = PC Mount Terminals
S = Shaft/Panel Seal (S/P Seal)

| Style Designation | FEATURES | | | | Screwdriver Slotted Shaft Equivalent | Angle Of Throw | Number Of Poles | Number Of Positions Per Pole | Shorting Or Non-Shorting Contacts |
|---|---|---|---|---|---|---|---|---|---|
| | Solder Lug Terminals | PC Mount Terminals | Shaft/Panel Seal | Adjustable Stops[1] | | | | | |
| A | X | | | | B | 30° | 1<br>2<br>4 | 02 thru 12<br>02 thru 06<br>02 or 03 | N or S<br>N or S<br>N or S |
| S | X | | X | | BS | | | | |
| P | | X | | | BP | | | | |
| SP | | X | X | | BSP | | | | |
| D | X | | | X | BD | | | | |
| SD | X | | X | X | BSD | 36° | 1<br>2 | 02 thru 10<br>02 thru 05 | N or S<br>N or S |
| DP | | X | | X | BDP | | | | |
| SDP | | X | X | X | BSDP | | | | |

[1] Adjustable stop versions allow selection of 2 positions to the maximum number of positions per pole.

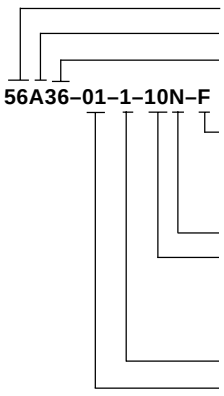
## ACCESSORIES

Control knobs available, see page I-57.

## STANDARD OPTIONS

**Available from your local Grayhill Distributor**
For prices and discounts, contact a local Sales Office, an authorized local Distributor, or Grayhill. Not available thru Distributors when Intermixing of shorting and non-shorting contacts. Contact Grayhill.

## ORDERING INFORMATION




**Series**
**Style:** Letters from Choices Chart
**Angle of Throw:** 30 or 36°

**Stop Arrangement:** The suffix C or F must be added to a one pole per deck switch with the maximum number of positions to indicate continuous rotation (C) or fixed stops (F) between position 1 and the last position. Leave blank if not applicable.
**Type of Contacts:** N = Non-shorting, S = Shorting
**Positions Per Pole:** 02 as a minimum to the maximum allowable for the angle of throw and number of poles per the Choices Chart. Use the letters AJ in this location if adjustable stop switch is to be ordered.
**Poles per Deck:** Limited by angle of throw. See chart
**Number of Decks:** 01 only




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